

(19) World Intellectual Property  
Organization  
International Bureau



05 JUL 2005

(43) International Publication Date  
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number  
**WO 2004/062591 A3**

- (51) International Patent Classification<sup>7</sup>: **C12Q 1/68**
- (21) International Application Number:  
PCT/US2004/000320
- (22) International Filing Date: 6 January 2004 (06.01.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/438,343 6 January 2003 (06.01.2003) US  
60/473,246 22 May 2003 (22.05.2003) US
- (71) Applicant (for all designated States except US): **OREGON HEALTH AND SCIENCE UNIVERSITY** [US/US]; 2525 Sw First Avenue, Suite 120, Mail Code Ad120, Portland, Or 97201 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **MOSES, Ashlee** [US/US]; 2525 Sw First Avenue, Suite 120, Mail Code Ad120, Portland, Or 97201 (US). **FRUH, Klaus** [US/US]; 2525 Sw First Avenue, Suite 120, Mail Code Ad120, Portland, Or 97201 (US). **KING, Jeffrey, S.** [US/US]; 2525 Sw First Avenue, Suite 120, Mail Code Ad120, Portland, Or 97201 (US). **HICKS, James, B.** [US/US]; 2525 Sw First Avenue, Suite 120, Mail Code Ad120, Portland, Or 97201 (US). **RAGGO, Camilo** [US/US]; 2525 Sw First Avenue, Suite 120, Mail Code Ad120, Portland, Or 97201 (US). **NELSON, Jay** [US/US]; 2525 Sw First Avenue, Suite 120, Mail Code Ad120, Portland, Or 97201 (US).
- (74) Agents: **DAVISON, Barry, L.** et al.; 2600 Century Square, 1501 Fourth Avenue, Seattle, WA 98101-1688 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report:  
10 February 2005
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS OF TREATMENT AND DIAGNOSIS OF KAPOSI'S SARCOMA (KS) AND KS RELATED DISEASES

(57) Abstract: The present invention uses gene expression profiling, and gene silencing methods to identify and provide a plurality of 'validated' KSHV-induced cellular gene sequences and pathways useful as targets for modulation of KSHV-mediated effects on cellular proliferation and phenotype (e.g., cancer) associated with latent and lytic phases of the Kaposi's sarcoma-associated herpesvirus (KSHV; Human herpesvirus 8; HHV8) life cycle. Particular embodiments provide therapeutic compositions, and methods for modulation of KSHV infection or KSHV-mediated effects on cellular proliferation and phenotype, comprising inhibition of KSHV-induced gene sequences. Additional embodiments provide screening assays for compounds useful to modulate KSHV infection or KSHV-mediated effects on cellular proliferation and phenotype. Further embodiments provide diagnostic and/or prognostic assays for KSHV infection.

WO 2004/062591 A3

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/00320

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12Q 1/68  
US CL : 435/6

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 435/6

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	POOLE et al. Altered patterns of cellular gene expression in dermal microvascular endothelial cells infected with Kaposi's sarcoma-associated herpesvirus. Journal of Virology. April 2002, Vol. 76, No. 7, pages 3395-3420.	1-3, 9-11, 14-16, 20-22, 25-27, 32-36
A	MOSES et al. A Functional Genomics Approach to Kaposi's Sarcoma. Ann N Y Acad Sci. Dec 2002, Vol. 975, pages 180-191.	1-3, 9-11, 14-16, 20-22, 25-27, 32-36
A	LAGUNOFF et al. De Novo Infection and Serial Transmission of Kaposi's Sarcoma-Associated Herpesvirus in Cultured Endothelial Cells. Journal of Virology. Mar 2002, Vol. 76, No. 5, pages 2440-2448.	1-3, 9-11, 14-16, 20-22, 25-27, 32-36
A	Spindle Cell Conversion by Kaposi's Sarcoma-Associated Herpesvirus: Formation of Colonies and Plaques with Mixed Lytic and Latent Gene Expression in Infected Primary Dermal Microvascular Endothelial Cell Cultures. Journal of Virology June 2001, Vol. 75, No. 12, pages 5614-5626.	1-3, 9-11, 14-16, 20-22, 25-27, 32-36

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

21 October 2004 (21.10.2004)

Date of mailing of the international search report

04 JAN 2005

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

A R Salimi

Telephone No. (571) 272-1600

# **INTERNATIONAL SEARCH REPORT**

**International application No.**

**PCT/US04/00320**

**Continuation of B. FIELDS SEARCHED Item 3:**  
**WEST, DERWENT, EPA, JPA, MEDLINE, NPL**

**search terms: HHV-8, Kaposi?, herpes virus, KSHV**